

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

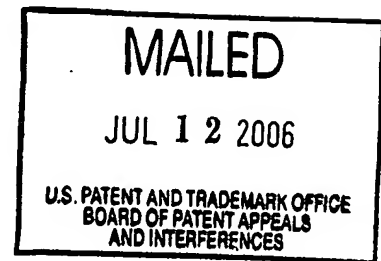
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte KATSUMI YAMAGUCHI,  
TAKAKO YAMAGUCH AND TOMOHIRO OKAZAKI

Appeal No. 2006-1836  
Application No. 10/087,556

ON BRIEF



Before KRASS, RUGGIERO, and BARRY, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-6 and 9-22.

The invention involves bump formation on a semiconductor device, best described by reference to representative independent claim 1, reproduced as follows:

1. A semiconductor device, comprising:

a contact pad on a semiconductor substrate;

a conductive bump on said contact pad, said bump comprising a coaxially-aligned stack of bodies having different cross-sectional dimensions, said bodies at the top of said stack having smaller cross-sectional dimensions.

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The examiner relies on the following references:

Murakami	5,874,780	Feb. 23, 1999
Kanda et al. (Kanda)	6,153,938	Nov. 28, 2000
Lin	6,426,556	July 30, 2002 (filed Jan. 16, 2001)

Claims 1, 3-6, 9, 11, 12, and 18-22 stand rejected under 35 U.S.C. §102 (e) as anticipated by Kanda.

Claim 2 stands rejected under 35 U.S.C. §103 as unpatentable over Kanda in view of Murakami.

Claims 10, and 12<sup>1</sup>-17 stand rejected under 35 U.S.C. §103 as unpatentable over Kanda in view of Lin.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

### OPINION

At the outset, we note that, in accordance with appellants' statement, at page 3 of the supplemental brief, "[c]laims 1-6 and 9-22 stand or fall together." Accordingly, we will focus on independent claim 1.

WE AFFIRM.

In our view, the examiner has clearly set forth a prima facie case of anticipation of the instant claimed subject matter by pointing to Figure 3 of Kanda. The drawing, together with its

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<sup>1</sup> Claim 12 stands rejected under both 35 U.S.C. § 102(e) and §103.

attendant description at column 6, shows a semiconductor device with a contact pad on a semiconductor substrate. Further, there is a conductive bump 2 on the contact pad. Because the bump also has a nipple 40 sitting atop the bump, Kanda clearly shows that the bump comprises “a coaxially-aligned stack of bodies having different cross-sectional dimensions” wherein the body (nipple 40) at the top of the stack has a smaller cross-sectional dimension.

Appellants argue that Kanda shows no more than the described prior art in the instant specification, and that because the bump and nipple in Kanda form a *single* body, the reference cannot teach a “stack of bodies,” as claimed. Appellants argue that the claims require the bump to be formed, not from a single body, but from plural bodies.

Claim 1 is a claim directed to structure, as are the other instant claims. Therefore, the manner in which the structure is formed is of no consequence. See In re Thorpe, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). The structure of Kanda clearly shows a coaxially-aligned stack of bodies having different cross-sectional dimensions (nipple 40 sits atop bump 2 in Figure 3), as claimed. Even though nipple 40 may have been formed from the structure of the material forming bump 2, the end structure is still a “coaxially-aligned stack of bodies having different cross-sectional dimensions,” as claimed. The nipple 40 is one body, coaxially-aligned with the body of bump 2. Nipple 40 and body 2 have different cross-sectional dimensions and the top body, 40, has the smaller cross-sectional dimension. Accordingly, all elements of the claimed invention are met.

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We do not find persuasive of non-anticipation, appellants' observation that Kanda represents the prior art as described in appellants' specification and that "it is this problem of non-uniformity and the benefits derived from the subject solution to this problem which is the issue in this appeal" (reply brief-page 1). Every element of the claimed structure is met by the structure described by Kanda, in both form and function. Accordingly, claim 1 is anticipated by Kanda.


Appellants do not separately argue the features of the other claims. Accordingly, claims 2-6 and 9-22 fall with claim 1.


The examiner's decision is affirmed.

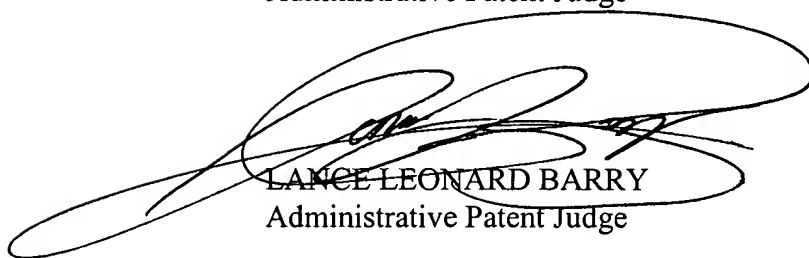
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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

  
ERROL A. KRASS  
Administrative Patent Judge

  
JOSEPH F. RUGGIERO  
Administrative Patent Judge

  
LANCE LEONARD BARRY  
Administrative Patent Judge

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